II. PROPERTY DESCRIPTION

A. GEOGRAPHICAL SETTING

Located in southwestern San Diego County between the communities of Jamul and Dulzura, HCWA is an irregularly shaped property that occupies 5,189 acres and borders on SR 94 for several miles along the southwestern edge of the property (Figures 2 and 3). Jamul Creek occurs near the northwestern portion of the property, Hollenbeck Canyon traverses the central portion of the wildlife area, and tributaries to Dulzura Creek run through the southern portion along Honey Springs Road (Figure 4). HCWA is surrounded by the Jamul Mountains to the west, McGinty Mountain and Lyon's Peak to the north, and Barber Mountain and White Mountain to the east.

1. Access to Property

The main access to the wildlife area is in the southern portion of the site, where a gravel public parking lot is located immediately north of Honey Springs Road, approximately 500 feet east of SR 94. Space for cars and horse trailers is available in this area. Although SR 94 borders the entire western boundary of the wildlife area, there is only restricted public access onto the property from this major roadway. Access into the northern portion of the wildlife area is from Rancho Jamul Drive, which traverses the northern end of the property. Limited parking along the shoulder of Rancho Jamul Drive and a small parking lot just east of SR 94, which is used for hunting dog training events, provide access into the northern portion of the property.

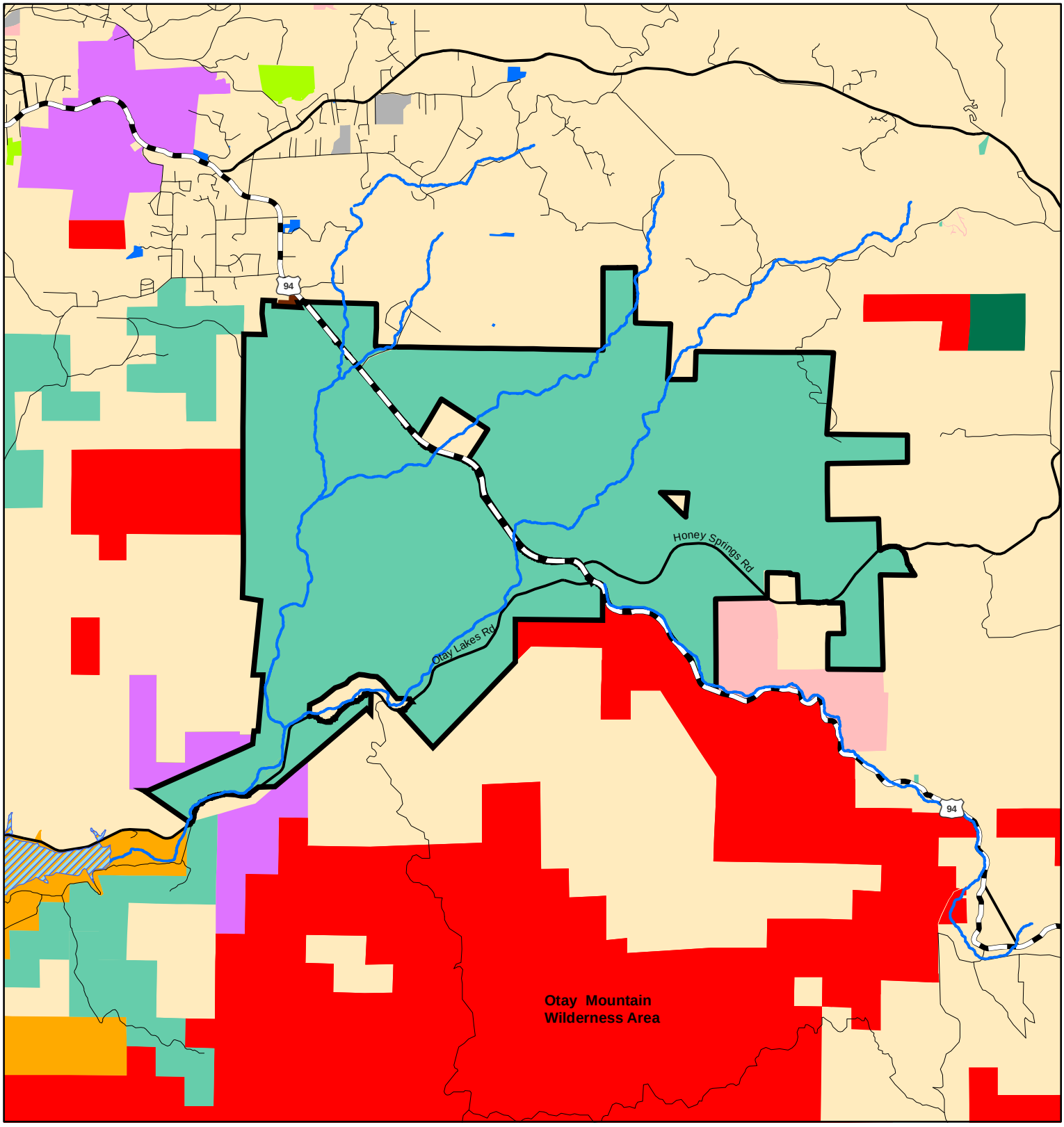
B. PROPERTY BOUNDARIES AND ADJACENT LANDS

1. Property Boundaries

HCWA is located on the Dulzura U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic map and occupies all or portions of Sections 7, 16 through 21, 28 through 31, and 33 of Township 17 South, Range 01 and 02 East, and the Jamul Land Grant. The configuration of the property boundary is illustrated in Figure 2 on a USGS 100,000 scale map.

2. Adjacent Lands-Ownership and Land Use

Much of the land surrounding HCWA is undeveloped (Figure 5). Various public agencies and public land conservancies have targeted these parcels as a high priority for open space acquisition with the goal of piecing them together to form contiguous habitat linkages and



Legend

- California Dept. of Fish and Game
- Bureau of Land Management
- City of San Diego
- County
- U.S. Fish and Wildlife Service (National Wildlife Refuge)
- School Districts
- U.S. Forest Service
- Water and Sanitation Districts
- Private
- Indian Reservation

Basemap Legend

- HCWA and RJER Boundaries
- State Highway
- Major Road
- Local Road
- Stream
- Lake/Reservoir

N

Feet

0 6,200

Source: SANDAG 2005 Ownership GIS Data Layer

EDAW

Regional Public Land Ownership

Figure 5

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Date: Sep 26, 2006

wildlife movement corridors. For example, RJER, acquired by the Department in several phases between 1997 and 2003, lies along the southwestern border of HCWA, west of SR 94. This property enhances the wildlife area by adding connectivity along the Jamul Creek and Dulzura Creek corridors, and by integrating additional high-quality coastal sage scrub and chaparral habitat, extensive grasslands, and additional riparian and oak woodland habitats.

The majority of other public lands in the vicinity are owned and/or managed by three other agencies in addition to the Department (Figure 5). For example, the USFWS manages several disjunct parcels of land located to the northwest of HCWA as part of the Otay-Sweetwater Unit of the San Diego National Wildlife Refuge. Immediately to the south, the BLM manages the Otay Mountain Wildlife Management Area and a Wilderness Area; these BLM areas together comprise 38,000 acres extending from the southern end of HCWA to the U.S.-Mexican border. The Cleveland National Forest, which includes 460,000 acres of U.S. Forest Service (USFS) land, is located to the east of HCWA. In addition, the cities of Chula Vista and San Diego, and the County of San Diego jointly manage the Otay River Valley Regional Park, a 3,000-acre open space park that extends approximately 11 miles along the Otay River Valley from San Diego Bay to Lower Otay Lakes Reservoir, just touching the far southwestern corner of RJER. The remainder of land in the region is mostly composed of smaller pieces of County- or City-owned property and undeveloped private lands. In addition, the rural homes of the Jamul Indian Reservation are located just north of the neighboring RJER.

3. Easements

An easement is a right held by one person or entity to make specific, limited use of land owned by another person or entity. Common easements include the right to pass across the property (right-of-way [ROW]); the right to construct and maintain a roadway across the property; the right to use a creek or river as a conduit to convey water through the property (water conveyance); or the right to place and maintain utility poles, utility trenches, water lines, or sewer lines.

Easements on HCWA include ROW access to Honey Springs Road and SR 94, granted to the County of San Diego and the California Department of Transportation (Caltrans). In addition to ROW access, the easement entitles the agencies to extend drainage structures and excavation and embankment slopes beyond the limits of the ROW where required for maintenance. San Diego Gas and Electric has also been granted an easement to access the property for maintenance of pipelines, drainage, and public utilities. Communication companies such as Pacific Bell have also been granted easements to access the property for maintenance of communication facilities.

An easement was also granted to the Otay Water District for a water pipeline ("exact location and extent of said easement is not disclosed of record"). Finally, an archaeological conservation easement was established to protect four archaeology sites (see subsection E).

C. PHYSICAL CHARACTERISTICS

1. Geology and Topography

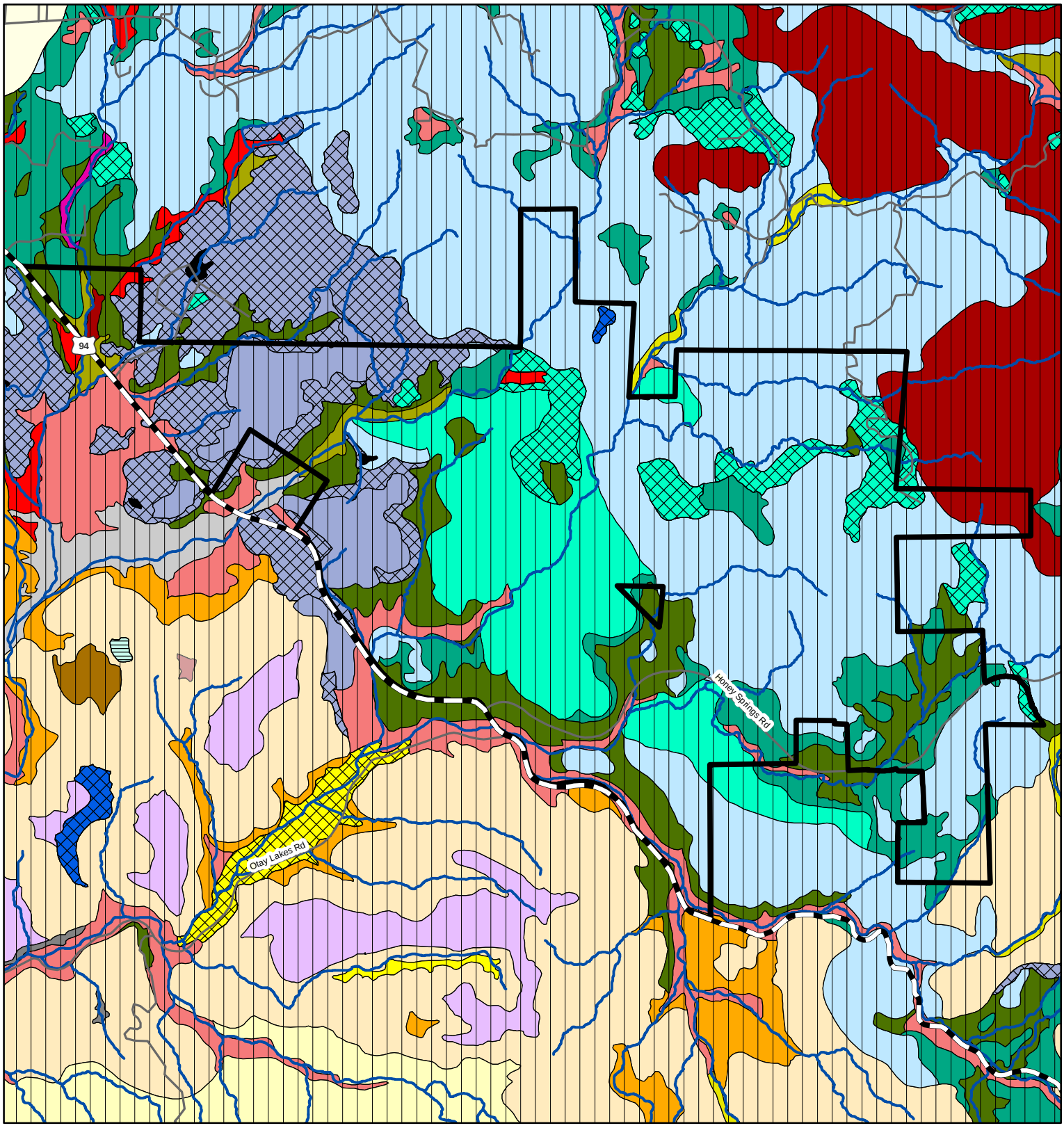
The San Ysidro Mountains to the south of HCWA and the Jamul Mountains and San Miguel Mountains to the west were at one time part of a series of volcanic islands off the coast of California. Volcanic ash and breccia from these volcanoes metamorphosed to become the fine-grained rock of the Santiago Peak Volcanic Formation. To the east of these islands, a granitic and gabbroic batholith was uplifted to form the Peninsular Range. HCWA lies near the contact of these two formations. Granitic boulders and granitic outcrops are present throughout the wildlife area.

HCWA is located where the coastal plains grade into the foothill mountains and is traversed by Jamul Creek, Hollenbeck Canyon, and Dulzura Creek, all of which flow down the watershed into Lower Otay Lake. The site has gentle to moderately steep hills and open valleys varying in elevation from 720 to 2,600 feet, and it contains a diverse mixture of vegetative communities and habitat features.

2. Soils

Numerous soil series occur within HCWA, as depicted by Figure 6. The majority of the LMP area is composed of Cieneba soils, which characterize the eastern side of HCWA. The next largest soil cover within the HCWA is the Vista series, which is predominant in the central portion of the wildlife area. In the northwestern portion, the dominant soil series is Las Posas, with Visalia, Ramona, Greenfield, Fallbrook, and small portions of Grangeville and Cieneba surrounding Las Posas soil series.

Many of the low-lying areas within the wildlife area, either directly along the drainages or adjacent to these areas, are underlain by soils of the Ramona, Visalia, and Greenfield series. The central and upper reaches of Hollenbeck Canyon, however, as well as segments of other tributaries, are characterized by the Vista and Cieneba soil series, similar to the adjacent uplands. In the north-central portion of the wildlife area, a small island of Bosanko clay soils occur. Descriptions of the soil types present in the LMP area are provided in Table 1.



Legend

Soil Series

- Acid Igneous Rock Land
- Anderson
- Auld
- Bosanko
- Chino
- Cieneba
- Escondido
- Fallbrook
- Friant
- Grangeville
- Greenfield
- Huerhuero
- Las Posas
- Olivenhain
- Placentia
- Ramona
- Redding
- Rough Broken Land
- San Miguel
- Stony Land
- Tujunga
- Unnamed Ponded
- Visalia
- Vista

Soil Erodibility

- Slight
- Moderate
- Severe

Basemap Legend

- HCWA Boundary
- State Highway
- Road
- Stream

N

Feet

0 3,700

EDAW

Soil Series

Figure 6

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Date: Sep 26, 2006

Table 1
Characteristics of Soil Types Present within the Hollenbeck Canyon Wildlife Area

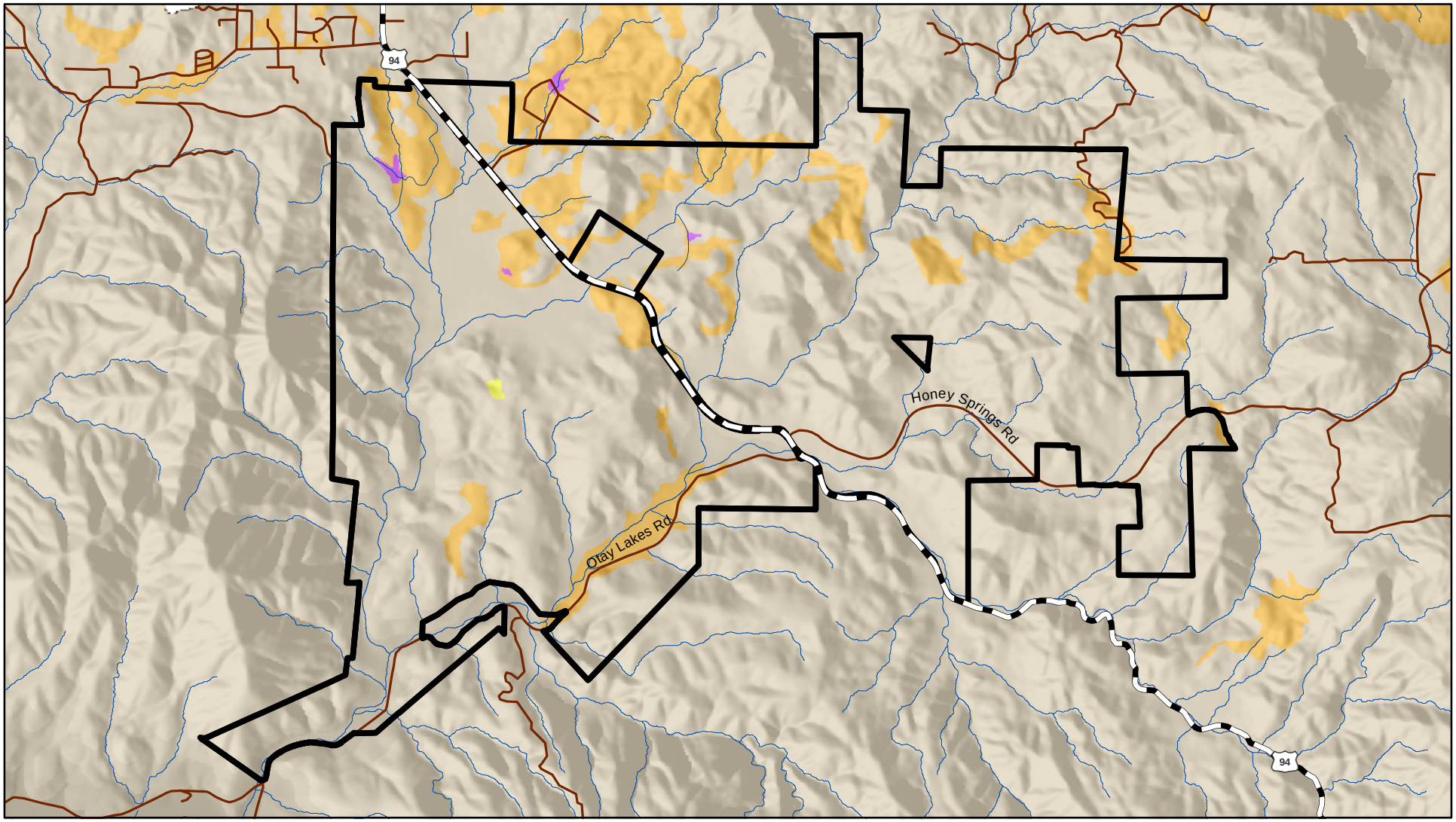
Soil Series	Structure	Slope	Additional Description	Suitability for Public Use
Acid Igneous Rock Land	Loamy, coarse sand in texture	Various (ranging from low hills to very steep mountains)	These shallow soils occur within rough terrain.	Cannot be graded easily. More valuable providing habitat for wildlife than developing paths, trails, and roads.
Bosanko	Moderately deep clays	2 to 30 percent	Well-drained soils occurring in undulating to hilly landscapes at elevations of 300 to 2,500 feet.	Used for range and agriculture (citrus, tomatoes, grain, grain hay).
Cieneba	Very shallow to shallow, coarse sandy loams	Various (rolling slopes to mountainous uplands)	Very excessively drained soils. Occur at elevations of 500 to 3,000 feet.	Suitable for creating trails and paths.
Escondido	Very fine, sandy loams	5 to 30 percent	Upland soils forming gently rolling areas. Fairly high runoff potential and severe erodibility.	Poor suitability for heavy use, good to fair suitability for paths, and fair to poor suitability for roads.
Fallbrook	Sandy loams	2 to 30 percent	Well-drained soils that occur on upland areas at elevations of 200 to 2,500 feet.	Suited to trails, paths, and moderately suitable road locations.
Friant	Rocky, fine sandy loams	9 to 70 percent	Shallow, well-drained, upland mountainous soil with a very high runoff potential and severe erodibility.	Poorly suited for paths, trails, and roads.
Grangeville	Fine sandy loams	0 to 2 percent	Formed in alluvial fans, poorly drained, fairly low runoff potential, and severe erodibility.	Moderately suitable for paths, trails, and road locations.
Greenfield	Very fine sandy loams	0 to 15 percent	Occur on alluvial fans and alluvial plains at elevations of 400 to 800 feet.	Suitable for trails and paths.
Las Posas	Stony, fine sandy loams with a clay subsoil	2 to 65 percent	These soils have moderate erodibility and high runoff potential.	Areas with slopes up to 15 percent are suitable for trails and paths; however, these soils are largely unsuitable for roads, picnic areas, or heavy use.
Ramona	Deep sandy loams with a sandy clay subsoil	0 to 30 percent	Well-drained soils associated with terraces and alluvial fans. Occur at elevations of 200 to 1,800 feet.	Suitable for trails and paths.
Visalia	Sandy loams	Unknown	Alluvial deposits, well drained, fairly low runoff potential, and severe erodibility.	Well suited to trails and paths, and moderately suitable as road locations.
Vista	Moderately deep and deep, coarse sandy loams	5 to 6 percent	Well-drained. Occur on upland areas at elevations of 300 to 500 feet.	Well suited to creating trails, paths, and roads.

Figure 7 shows the erodibility potential of the soil types described above. Most of HCWA consists of soils with a high potential for erosion; however, several areas with only a moderate potential for erosion are scattered throughout the northern half of the wildlife area. Exposure of soils from past fires (most recently, the Honey Fire of 1996), has created areas that are even more vulnerable to erosion and will remain that way until natural vegetation returns. Records kept since the early 1900s indicate the majority of the LMP area has burned several times (see Subsection D, Fire History). Only a small portion of HCWA along SR 94 has not burned at all, based on fire records.

Soils and Sensitive Species Affinities

Soils, along with climate, have long been recognized as an important factor in affecting the composition and distribution of vegetation within a region (Jenny 1980; Major 1951). Soils derived from unusual parent material such as limestones, dolomite, shales, gypsum, and serpentinite may support unique plant associations, endemic species and/or morphological and physiological modifications of plants (Kruckeberg 1986). Unusual soils, in combination with evolutionary forces such as isolation and catastrophic selection, may be an important stimulus for plant speciation (Raven 1964; Kruckeberg 1986). In southern California, unusual soil types including gabbro soils, clay soils and sandstones, are important for supporting endemic plant communities and species (Oberbauer and Vanderwier 1991). Twelve sensitive plant species and one endangered butterfly found at HCWA occur on at least seven different soils series (Table 2). The seven soils series are classified as an alfisol, entisol, inceptisol, or vertisol. A brief description of the characteristics of these soil orders and the associated sensitive species is presented below. Additional information about the sensitive species is provided in Section III, Subsection C.

Alfisols are soils that have been in place long enough for the movement and accumulation of silicate clays within the soil profile. These soils are characterized by a massive, hard surface layer and by horizons of clay accumulation that have a high saturation base. Alfisols that support sensitive plant species on the HCWA include the Fallbrook, Las Posas, and Ramona soil series. The Fallbrook soils series include soils that are well-drained sandy loams that formed in the parent material that weathered in place. Within HCWA, these soils support delicate clarkia (C*larkia delicata*), Engelmann oak (*Quercus engelmannii*), Ramona spineflower (*Chorizanthe leptotheca*), rush-like bristle bush (*Machaeranthera juncea*), and San Diego sunflower (*Viguiera lacinata*). The Las Posas soils are also well-drained, moderately deep, stony, fine sandy loams with a clay subsoil. These soils were formed in material weathered from basic igneous rocks, and on HCWA these soils support Englemann oak, San Diego sunflower, and San Diego County



Legend

- Severe
- Moderate
- Slight
- None

Basemap Legend

- HCWA and RJER Boundaries
- State Highway
- Road
- Stream

N

Feet

0 5,000

EDAW

Soil Erodibility

Figure 7

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Date: Sep 25, 2006

Table 2
Soils and Sensitive Species Affinities within the Hollenbeck Canyon Wildlife Area

Soil Order	Soil Series	Soil Types	Sensitive Species Occurring on HCWA [Common name (Scientific name) and # of Occurrences]												
			San Diego thornmint (*Acanthomintha ilicifolia*)	San Diego County needlegrass (*Achnatherum diegoense*)	Palmer's sagewort (*Artemisia palmeri*)	Ramona spineflower (*Chorizanthe leptotheca*)	Delicate clarkia (*Clarkia delicate*)	Small-flowered morning glory (*Convolvulus simulans*)	Snake cholla (*Cylindropuntia californica* var. *californica*)	Palmer's grappling hook (*Harpagonella palmeri*)	Southwestern spiny rush (*Juncus acutus* var. *sphaerocarpus*)	Rush-like bristle bush (*Machaeranthera juncea*)	Engelmann oak (*Quercus engelmannii*)	San Diego sunflower (*Viguiera lacinata*)	Quino checkerspot butterfly (*Euphydryas editha quino*)
Alfisols	Fallbrook	FaD2, FaE2, FeE2, FvD, FvE				4	2					1	3	1	
	Las Posas	LrG		3									3	1	
	Ramona	RaB, RaC, RaC2, RaD2				1	2		2	4		6	8		
Entisols	Acid Igneous Rock Land	AcG											1		
Inceptisols	Vista	VsE, VvE, VvG			2	1	1			1			17	1	
Vertisols	Bosanko Stony Clay	BtC	6					1					2		20
	Cieneba	CmrG		3	1	3	3			3	2	6	27	1	

needlegrass (*Achnatherum diegoense*). The Ramona soils are well-drained, very deep sandy loams that have a sandy clay loam subsoil. These soils formed in granitic alluvium and are often found on alluvial terraces and fans. Within HCWA, these soils support delicate clarkia, Engelmann oak, Palmer's grappling hook (*Harpagonella palmeri*), Ramona spineflower, rush-like bristle bush, and snake cholla (*Cylindropuntia californica* var. *californica*).

Entisols are young soils that show little, if any alteration of the parent material. The only entisol soil on HCWA is the Acid Igneous Rock Land. The granitic rock outcroppings found throughout HCWA are all Acid Igneous Rock Land soil. Only Engelmann oak was found on this soil series.

Inceptisols are soils that have been in place long enough to show slight alteration of the parent material. The original rock structure has been destroyed, but little, if any movement and accumulation of silicate clays has taken place within the soil profile. The only inceptisol soils found on HCWA are the Vista soils series, which are well-drained, moderately deep coarse sand loams that are derived from granodiorite or quartz diorite. Within HCWA these soils support delicate clarkia, Englemann oak, Palmer's grappling hook, Ramona spineflower, Palmer's sagewort (*Artemisia palmeri*), and San Diego sunflower.

Vertisols are clayey soils that are more than 20 inches deep and in most years crack to a depth of at least 20 inches. These soils also have other characteristics that result from the shrinking and swelling that occurs seasonally following the winter and spring rains. The vertisol soils on HCWA that support sensitive plant species include the Bosanko Stony Clay and the Cieneba soils. The characteristics of these heavy clay soils are strongly affiliated with the distribution of certain sensitive species, especially the Bosanko Stony Clay soil. The clay soil endemic species are adapted to these types of soils and the dynamic changes they go through each season, while many of the common native species found in the coastal sage scrub and chaparral are excluded from these environments. Because of this, these areas are often open grasslands that are dominated by annual wildflowers and geophytes. One of the annual wildflower species associated with these clay soil "lenses" and grasslands is the dot-seed plantain (*Plantago erecta*), which is the primary host plant for the Quino checkerspot butterfly. Many of the common nectar sources for the adult Quino butterflies are also associated with these clay soil areas, including goldfields (*Lasthenia californica*) and ground pink (*Linanthus dianthiflorus*). In addition, the secondary host plants for Quino, including owl's clover (*Castilleja exerta*), and bird's beak (*Cordylanthus rigidus*), are also commonly associated with these open habitat areas (Mattoni et al. 1997). On HCWA, Quino and both San Diego thornmint (*Acanthomintha ilicifolia*) and small-flowered morning-glory (*Convolvulus simulans*) occur on the Bosanko Stony Clay soil type, while the delicate clarkia, Englemann oak, Palmer's grappling hook, Ramona spineflower,

rush-like bristle bush, Palmer's sagewort, southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and San Diego County needlegrass occur on the Cieneba soil series.

3. Climate

San Diego County experiences a Mediterranean climate, which is characterized by wet winters and dry summers. This is largely due to a semipermanent high-pressure zone that sits over the Pacific Ocean. As it moves northward in the summer, storm tracks are deflected to the north, resulting in little precipitation in the southern part of the state. In the winter, the high-pressure zone weakens and moves southward, allowing storms to move into the area.

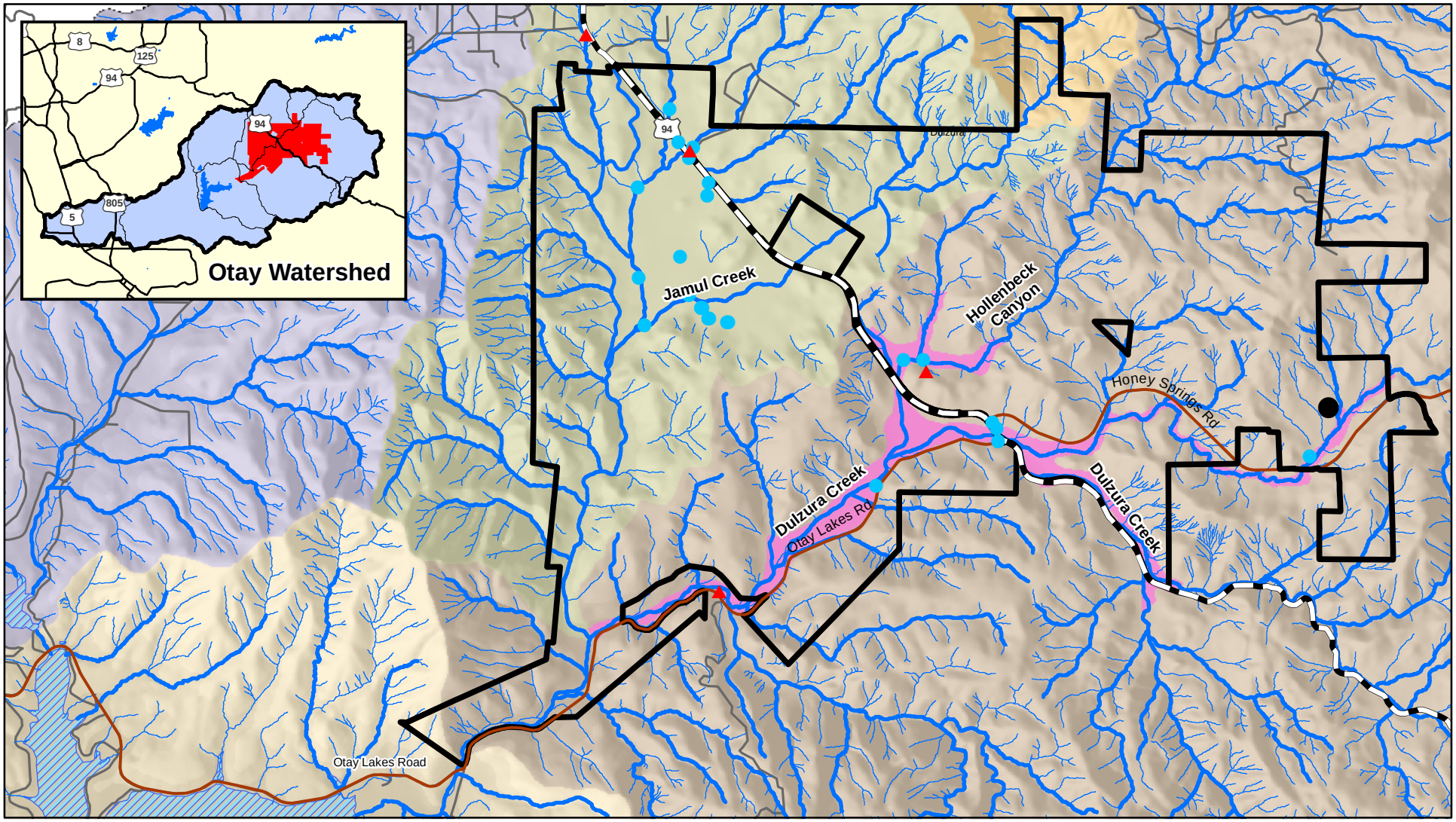
Coastal San Diego County tends to have small daily and seasonal temperature ranges and a higher relative humidity, whereas inland areas are less affected by maritime influences and tend to be drier and have more extreme temperature ranges. HCWA is located approximately 20 miles inland and average temperatures vary from 42° F (January low) to 87° F (August high). Average monthly precipitation is low year-round, ranging from 0.1 inch in the summer months (June – August) to approximately 2.8 inches during the winter (January and February).

One of the most influential weather phenomena in the region is the Santa Ana winds. Usually beginning in the fall and peaking in December, hot, dry winds originating in the Great Basin blow towards the coast. The winds can be quite strong, with gusts up to 100 miles per hour. This scenario, involving strong winds, rapidly increasing temperature, and extremely low relative humidity (<25 percent), is prone to creating an environment highly conducive to rapidly spreading wildfires. The wildfire dangers increase exponentially if the region has been experiencing a drought.

4. Hydrology

Natural Drainages

HCWA lies within the 93,000-acre Otay River Watershed and is traversed or bordered by three major drainages and numerous tributaries, which flow towards the south and southeast, eventually merging on the adjacent RJER and flowing into the Lower Otay Reservoir (Figure 8). The northernmost drainage, Jamul Creek, is a seasonal tributary that drains the northern portion of the wildlife area and has a contributing drainage basin (the Jamul subbasin) of approximately 7,795 acres. Two branches of Jamul Creek exit HCWA and enter into RJER through culverts



EDAW

Hydrology and Water Features

Figure 8

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Date: Nov 29, 2006

underneath SR 94. Within the wildlife area, the northeasternmost branch of Jamul Creek is within the Lee subbasin, which has a contributing drainage basin of approximately 2,075 acres; this subbasin is located predominantly north of HCWA (Figure 8).

The central drainage within the wildlife area, Hollenbeck Canyon, drains the central hillsides and is part of the Hollenbeck subbasin, a drainage basin of approximately 31,713 acres. Within the wildlife area, two tributaries converge with the main drainage of Hollenbeck Canyon in a low-lying area immediately east of SR 94, enter into RJER through a culvert underneath SR 94, and then converge with Dulzura Creek within the adjacent RJER.

The third major drainage of HCWA, Dulzura Creek, is located southeast of Hollenbeck Canyon and drains the southern portion of the wildlife area. This tributary is also within the Hollenbeck subbasin and thus has a contributing drainage basin of approximately 31,713 acres. In the southeast portion of the wildlife area the main branch of Dulzura Creek flows just north of Honey Springs Road; however, this drainage is crossed by this roadway approximately 1,200 feet east of SR 94, where Dulzura Creek then flows along the south side of Honey Springs Road before entering RJER through a culvert underneath the highway. This main branch of Dulzura Creek serves as a conduit for transporting water from Barrett Lake to Lower Otay Reservoir, both of which are operated by the City of San Diego. Mean daily flow data, recorded between 1940 and 1997 by a stream gauge located just below the confluence of Jamul and Dulzura creeks, indicate that the flow rate ranges seasonally from approximately 5 cubic feet per second in October to 68 cubic feet per second in March (Wildlands, Inc. 1999).

Past uses (e.g., farming and ranching, including livestock grazing) have left segments of the tributaries within HCWA disturbed and deeply incised, thereby reducing the heterogeneity of the riparian habitat, reducing native species diversity, and increasing the number of non-native plants along portions of the riparian corridors. Minimal restoration and enhancement efforts have been conducted within HCWA; however, some work has been done by the Department, including the use of bundles of mulefat (*Baccharis salicifolia*) to secure incised creek banks and minimize additional erosion in select areas. On the adjacent RJER, however, a large-scale riparian restoration has been conducted to establish overflow channels, restore native vegetative cover, and increase riparian structural diversity. These efforts will enhance breeding and foraging opportunities for native fauna in the vicinity of HCWA that are dependent on multiple-level riparian habitat.

Artificial Water Bodies

A few seasonally wet ponds are located at the eastern portion of the property, near the old residential homes just north of Honey Springs Road (Figure 8). Historically, these ponds may have held water for agricultural practices to catch, store, and utilize runoff for use by domestic animals.

Artificial Wells

Several groundwater wells have been constructed for agricultural purposes and other past uses within HCWA and the adjacent RJER (Figure 8). There are seven wells within HCWA, although not all are functional at present. All of the functional wells can be used to draw water for wildlife management needs; only one well provides potable water. Aside from the on-site wells, several others are located along SR 94.

Fire Hydrants

Two fire hydrants are located within the wildlife area; one is located near SR 94 in the northern portion of the property near existing wells, and the other is located near an existing well in the southern end of Hollenbeck Canyon where an unnamed tributary enters the canyon from the north (Figure 8). A third fire hydrant is located along SR 94 just outside of the northern boundary of the wildlife area (Figure 8).

Water Rights

The following information about water rights pertaining to HCWA was obtained by reviewing title documents, CCR Title 23, and through discussions with the Department's Lands and Facilities Branch Water Coordinator:

- **Riparian rights**. Riparian rights are held by the owner of the land abutting a stream. As such, the Department holds riparian rights to all creeks within HCWA. Riparian landowners may use natural flows directly for "reasonable, beneficial purposes" on riparian lands without applying for a permit (CCR Title 23).
- **Water conveyance**. The City of San Diego holds the ROW to use Dulzura Creek as a conduit to convey water through the property.

D. FIRE HISTORY

1. Wildfires

Wildfires, both natural and human-caused, have historically swept through HCWA and surrounding areas fueled by the native scrublands and native and non-native grasslands that characterize the landscape. Wildfire data for the wildlife area and surrounding vicinity were obtained through the following sources:

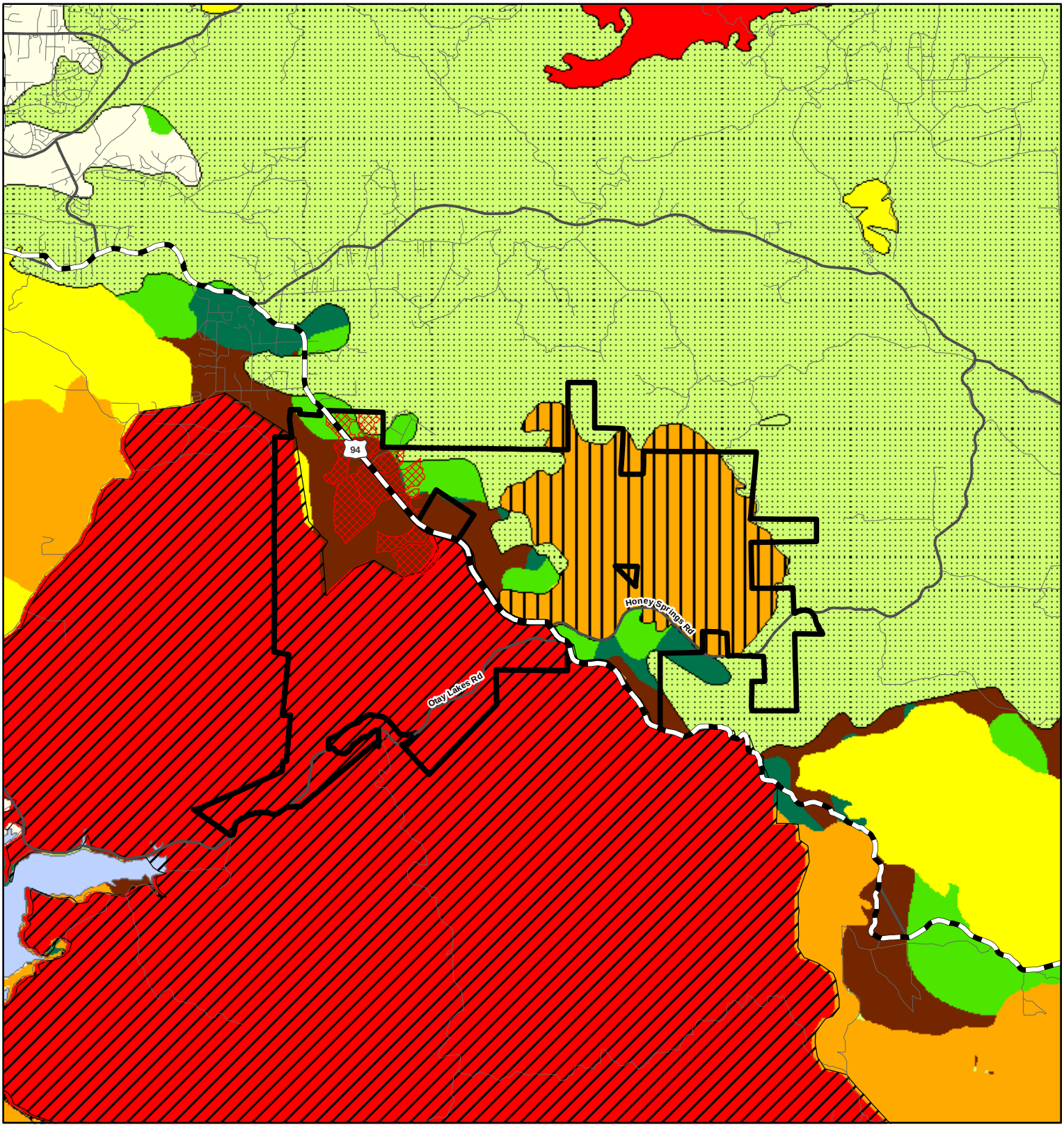
- California Department of Forestry and Fire Protection (CDF) burn history database (CDF 2004), which covers the period from 1910 to 2004 in the vicinity of the wildlife area.

- 2003 Southern California Fires, Burned Area Emergency Stabilization and Rehabilitation Plan, prepared by the Interagency Burned Area Emergency Response (BAER) team; this report provides recommendations for all BLM lands, and USFWS and Bureau of Indian Affairs administered lands that were affected by the October 2003 fires. Various fire maps, including burn severity mapping, are also available; these maps include both federal and non-federal lands.

- *Post-fire Survey and Recommendations for Four San Diego County Department of Fish and Game Ecological Reserves* (Bainbridge 2004)

The CDF database includes boundaries of individual fire events, acreage burned, and the year of the event. Generally, fires smaller than 100 acres are not mapped. The CDF fire data were used to prepare fire history and fire frequency maps for HCWA and the surrounding landscape (Figures 9 and 10). The fire history map illustrates the most recent fire (within a decade, or group of years) at a particular location. The fire frequency map illustrates the number of fires that have occurred at that location since 1910.

Two important factors to consider when evaluating the effect of fire on vegetation recovery are season of burn and the intensity of the fire. The CDF database includes the month of ignition for most fires; however, information about fire intensity, if available, must be obtained from other sources. Mapping prepared by the BAER team for the 2003 Otay Fire does include information about the varying intensity of that fire within its perimeter. However, burn severity data for other fires that have burned within HCWA or on neighboring areas were not available. An additional factor that can significantly affect vegetation recovery is the time interval between fires. For example, the Diegan coastal sage scrub vegetation community burns easily and can



Legend

- Never Burned
- 1910 - 1926
- 1940 - 1958
- 1969 - 1979
- 1980 - 1989
- 1991 - 1999
- 2000 - 2004
- 1970 Laguna Fire
- 1996 Honey Fire
- 2003 Otay Fire
- Recent Prescribed Burn

Basemap Legend

- HCWA and RJER Boundaries
- State Highway
- Major Road
- Road
- Lake/Reservoir

N

Feet

0 7,600

Source: California Dept. of Forestry and Fire Protection 2004.

EDAW

Fire History

Figure 9

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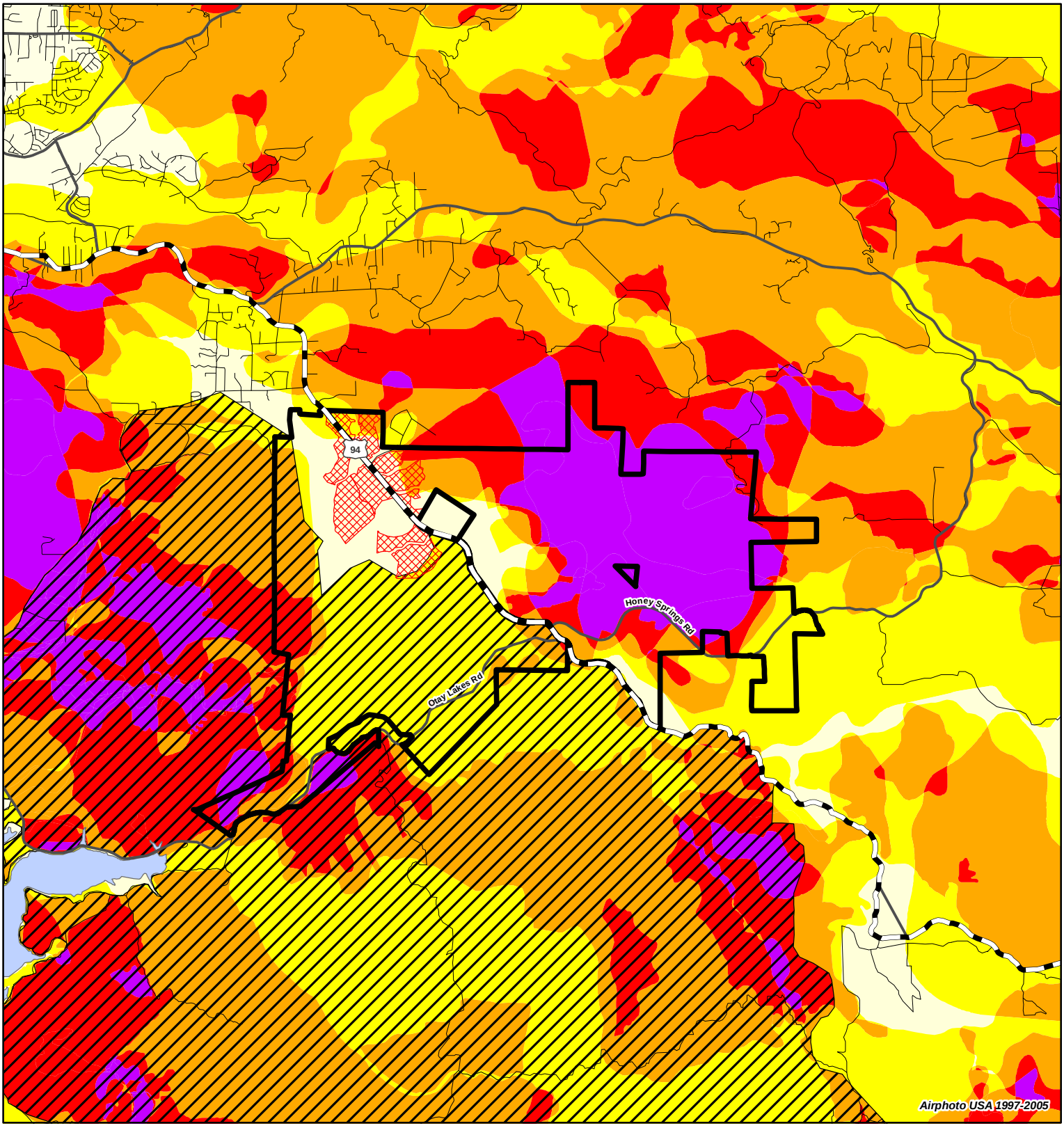
Date: Sep 26, 2006



Legend

- 2003 Otay Fire
- Recent Prescribed Burns

Burn Frequency

- No Record of Burn
- Burned Once
- Burned Twice
- Burned Three Times
- Burned More than Three Times

Basemap Legend

- HCWA and RJER Boundaries
- State Highway
- Major Road
- Road
- Lake/Reservoir

N

Feet

0 7,600

Source: U. S. Forest Service 2004.

EDAW

Fire Frequency (since 1910)

Figure 10

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Date: Sep 25, 2006

reburn 2 to 3 years following a fire event, primarily due to invasion by highly flammable non-native grasses that establish post-burn (BAER 2003). The native species that characterize this vegetation community are fire-adapted and quickly regenerate from seed post-burn. However, fires that occur less than 10 years apart in Diegan coastal sage scrub can reduce the seed bank of native shrub species. When this occurs, invasive grasses often establish in areas once occupied by the native species, which then provide flashy fuels that will readily burn in subsequent fires; this leads to further degradation of the native habitat. If the fire frequency increases within this degraded scrub habitat, conversion to a non-native grassland habitat that includes many non-native broadleaf species (e.g., mustards) will occur (BAER 2003). Once habitat conversion occurs, the non-native species continue to outcompete any native species that attempt to reestablish.

Information about fire size, season of burn, severity, and interval since previous fires is discussed below for the primary wildfires that have affected HCWA and the surrounding vicinity. Recent large-scale fires that affected neighboring lands but did not burn HCWA are also described, since the condition of fuels on adjacent lands must be considered when assessing the fire risk from surrounding areas.

Otay Fire

Although HCWA did not burn during the 2003 Otay Fire, the majority of RJER immediately adjacent to HCWA did burn during this 45,971-acre firestorm, affecting 3,710 acres (79 percent) of the neighboring reserve. The Otay Fire also burned all areas within approximately 1.5 miles to the west of RJER, and all areas within approximately 3 miles or farther to the south of RJER (Figure 9). Within the southern portion of RJER, the Otay Fire largely burned an area that had not burned prior to this 2003 fire event (based on records). However, areas along the western boundary and southern tip of RJER had burned once, twice, three times, or more than three times prior to the 2003 Otay Fire (Figure 10). The most recent fires that preceded the Otay Fire on lands west of SR 94 occurred in 1968, 1978, 1979, 1980, and 1984.

Honey Fire

Outside of the Otay Fire perimeter, the most recent wildfire in the area was the 1996 Honey Fire that burned 3,387 acres, including 2,935 acres within HCWA (Figure 9). The majority of the area that burned during the Honey Fire had burned three or more times prior to 1996 (Figure 10). The most recent fires that preceded the Honey Fire within HCWA occurred in 1926, 1943, and

1970; therefore, the age of the vegetation that burned in this portion of the wildlife area was between 26 and 70 years.

Most of the area that burned during the Honey Fire supported Diegan coastal sage scrub habitat. The response of this vegetation community to fire is described above. The northern portion of the Honey Fire within HCWA, however, is characterized by chaparral habitat. Chaparral is also a fire-adapted vegetation community and the characteristic species quickly regenerate from seed or by resprouting from underground burls post-burn (Keeley 2000). There is much debate as to what constitutes a "natural" fire interval for chaparral; estimates range from 20 to 100 years (Keeley et al. 1989; Minnich 1995; Conrad and Weise 1998; Beyers and Wakeman 2000). Based on field observations during 2004, the chaparral habitat and much of the Diegan coastal sage scrub that were burned during the Honey Fire are recovering well. However, some areas of Diegan coastal sage scrub are relatively disturbed and are characterized by substantial cover of non-native grasses.

Laguna Fire

A large-scale blaze that affected 174,162 acres immediately east of SR 94, including 1,115 acres within HCWA, was the 1970 Laguna Fire (Figure 9). When this fire occurred 36 years ago, all areas within many miles north and east of HCWA burned. Aside from the Honey Fire described above, and other relatively small fires that have occurred in the vicinity, most of the area affected by the Laguna Fire has not burned since the 1970s (Figure 9).

Information about the three major fires that burned within or immediately adjacent to HCWA is summarized in Table 3.

Table 3
Large-Scale Fires within or adjacent to the Hollenbeck Canyon Wildlife Area

Name	Month and Year	Acres	Notes
Laguna Fire	October 1970	174,162	Burned 1,115 acres (21 percent) within HCWA, and the majority of the landscape east of SR 94.
Honey Fire	October 1996	3,387	Burned 2,935 acres (56 percent) within HCWA.
Otay Fire	October 2003	45,971	Did not burn HCWA, but burned 3,710 acres (79 percent) within adjacent RJER and much of the neighboring lands to the southeast. Fire analysis indicates that burn severity was predominantly low.

Additional Fire History

Aside from the Honey Fire that burned up to SR 94 from the east, and the Otay Fire that burned up to SR 94 from the west, the SR 94 roadway corridor in the vicinity of HCWA is predominantly flanked by land that either has no record of wildfire or has not burned since the 1940s. The general lack of fire in this area since fire records have been maintained is likely due to fire suppression around the ranch facilities and the agricultural fields, and active fuel management along the SR 94 road corridor.

2. Prescribed Fires

Controlled burns have been conducted along the SR 94 and Honey Springs Road corridors to create fuel breaks to prevent fires from spreading from ignition sources along these roads. These ignition sources may include cigarettes, matches, or car fires. During May 2004, a controlled burn was conducted by the CDF, USFWS, and the County Rural Fire Department along approximately 2 miles of the SR 94 corridor and 1 mile of Honey Springs Road. The objective was to reduce the flashy fuels within 5 to 30 feet of these roadways within both HCWA and RJER, thereby reducing the risk of another fire in the area too soon after the Otay Fire. This controlled burning was designed to remain 100 feet outside of the drainages that cross these roadways.

Other than the roadside burning described above, since acquisition of HCWA, only one 205-acre prescribed burn has been conducted by the Department within the wildlife area. The prescribed burn area depicted in Figures 9 and 10 within HCWA coincides with a hunting dog training area where the burn was conducted to control weeds.

E. CULTURAL FEATURES

Cultural features include resources of architectural, historical, archaeological, and spiritual value. The following definitions, adapted from the terms defined by Hector (2002), are used to describe the cultural resources within the project area.

- **Habitation** - site containing evidence of long-term use and occupation by native people, also called a village site
- **Sacred Site** - location or resource important to native people

- **Rock Art** - art that consists of petroglyphs (art pecked into the surface of rocks) or pictographs (art painted on rocks)

- **Temporary Camp** - campsite used by native people during certain times of the year to collect or process specific resources, such as acorns

- **Bedrock milling** - granite or other bedrock outcrops used for grinding and processing plant and animal foods; types include slicks (flat, polished surfaces), basins (shallow, oval surfaces), and mortars (deep, circular holes in the rock)

- **Quarry** - an area where native people removed raw materials that they could then form into tools; typical remnants would include flakes and shatter from the removal process

- **Lithic Scatter** - refuse from the manufacture of stone tools by native people; typically a lithic scatter includes flaked stone and shatter from flint knapping (the manufacture of stone tools by striking the rock with another rock or antler to produce sharp edges)

- **Isolate** – three or less artifacts without any other cultural objects nearby

- **Ditches and Ponds** - historic water control features that may or may not still be in use

- **Historic Foundation, Adobe, etc**. - any feature made between 1769 and the present (although a structure generally has to be more than 50 years old to be considered historic)

- **Reservoir** - a historic feature that may or may not still contain water; these could be earthen or concrete

- **Structure Location** - mapped location of a structure or building; there may be no observable remains on the surface of the ground

1. Prehistory and Early History

Radiocarbon dating indicates that human settlement in southern California occurred at least 10,000 to 12,000 years ago. These early inhabitants were hunter-gatherers who lived in small bands and traveled seasonally between the coast and inland areas to hunt large game, gather shellfish, and process plant materials. This period is often referred to as the Paleoindian period represented locally by the San Dieguito complex. In San Diego County, the earlier San Dieguito complex was followed by the Archaic period La Jolla complex, which more heavily emphasized processed plant foods. The Archaic period is differentiated from the earlier Paleoindian period

by a shift to a more generalized economy and an increased focus on the use of grinding and seed technology. Large bifaces, manos and portable metates, and core tools are characteristic of this period. During the Late Prehistoric period, around 2,000 years ago, Yuman-speaking people from the eastern Colorado River region began migrating into southern California. This period is categorized by smaller projectile points, the replacement of flexed inhumation with cremation, the introduction of ceramics, and an emphasis on inland plant food collection and processing such as acorns (True 1966).

The Kumeyaay (previously referred to as Diegueño) who inhabited the southern region of San Diego County, western and central Imperial County, and northern Baja California are the direct descendants of these early Yuman hunter-gatherers. Their territory extends from Agua Hedionda Lagoon south into Baja California and east to the Sand Hills of Imperial County. This territory includes marine, foothill, mountain, and desert environments. The material culture of the Kumeyaay includes ceramics for cooking and storage vessels; woven baskets; flaked lithic and ground stone tools; arrow shaft straighteners; and stone, bone, and shell ornaments.

Kumeyaay culture and society remained relatively stable until the introduction of the mission system during the 18th century. The founding of the mission and presidio of San Diego in 1769 drastically changed the lifestyle and culture of the Kumeyaay, as many were forcibly removed from their land and required to assimilate into the Spanish culture. The Kumeyaay employed many strategies to resist their new lifeways, such as fleeing into the mountains, fighting back, and burning Spanish settlements (Hector 2002). However, by the 1820s, the Kumeyaay of Jamul had all been removed to the mission (de Barros et al. 1998).

2. Hollenbeck Canyon Wildlife Area

In 1831, the Jamul Valley, consisting of approximately 9,000 acres including present-day HCWA and RJER, was granted to Pio Pico (former governor of California) as Rancho Jamul (de Barros et al. 1998). Pico built an adobe house on the property and stocked the ranch with livestock. Colonel Henry S. Burton and his family occupied the land after Pio Pico, in the mid-1850s. However, the Burton family lost their title to Rancho Jamul at the end of the decade and began an intense court battle (that lasted almost 40 years) to regain its possession.

During the 1860s, several farmers began to settle on Rancho Jamul believing that it was government land available for homesteading (since the land was still under litigation). During the late 1890s, John D. Spreckels, San Diego entrepreneur and sugar fortune heir, gained control of the land and formed the Southern California Mountain Water Company. This venture helped

capture rainfall from the watersheds of southern San Diego County's backcountry with the construction of Morena, Barrett, and Otay dams. In July 1916, Spreckels sold the property to former San Diego Mayor Louis J. Wilde, who hoped to convert it into a wild west dude ranch and movie studio. However, these plans did not materialize, and Wilde planted Turkish tobaccos on the property instead.

In 1929, George R. Daley bought the property and turned it into a cattle ranch (de Barros et al. 1998). Lawrence Daley inherited the eastern portion of Rancho Jamul from his uncle and continued the ranching and agricultural business. The western portion of the George Daley property was inherited by Donald Daley, brother of Lawrence. In May 2001, the Department acquired the major portion of HCWA and established it as a wildlife area. Lawrence and Barbara Daley maintained ownership of a 119-acre area on the west side of HCWA, immediately east of SR 94.

The former Honey Springs area was not settled until after the Civil War. In 1880, D.E. Dowling, a beekeeper, became the first historic settler on the property (Chace et al. 1980). Other settlers of the area during the 1890s included the Loves, James Murphy, and "Miss Tyson," who taught at the Honey Springs School located on Rancho Jamul. However, most tenants did not stay long because of persistent droughts. In more recent times, the property was maintained as a ranch where cattle ranged in the nearby hills. Barbed-wire fences, feeding troughs, and water basins are still found on the property as a testament of the ranching period. Three houses of various 20th century frame styles and a modern metal-covered barn were reported for the property in 1980 (Chace et al. 1980). Next to these houses stood a series of corrals most likely used for sheep or goats. Currently, two of the houses, one built in the 1920s and the other in the 1930s, remain on the property and are in disrepair; the third house (built in the 1970s) was demolished by the Department (Dillingham, personal communication 2006).

3. Previous Investigations

At least 11 cultural resource investigations have been conducted within the limits of HCWA. Nine of these studies were conducted by Caltrans for a SR 94 improvement project (see Hector 2002:12 for summary). Eight of these Caltrans studies consisted of archaeological surveys within the road ROW; however, some of the investigated sites extended into the wildlife area. Cultural resources within and immediately adjacent to HCWA identified by Caltrans included a human cremation, a boulder with rock art (pictographs), and a large habitation area containing several surface artifacts. In the ninth study, Caltrans evaluated whether the Daley Ranch compound was architecturally significant. Fisher (1997) found that the group of buildings and

structures was not eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.

The largest survey was conducted in December 1979 and January 1980, on the property formerly known as Honey Springs Ranch. Several sites were recorded near the eastern boundaries of the wildlife area. The survey recorded 16 sites and a group of isolated finds on the Honey Springs property (Chace et al. 1980).

Hector conducted surveys in May and June of 2002 to inventory cultural resources within select areas identified by the Department for potential future site improvements or access (Hector 2002). Thirteen previously unrecorded archaeological sites were found by the survey team. In addition to the survey, Hector included an Archaeology Management Plan for the HCWA (2002). This document is on file with the Department.

An archaeological conservation easement was signed in 1983 that included sites CA-SDI-189, -7447, -7448, and -7449 (Table 4). According to this easement, the Department would be required to address these sites in a management plan. In addition, the Department would have to ensure that these sites were not disturbed and that no cattle grazing would occur in these areas (Chace et al. 1980).

Table 4
Sites within the Archaeological Conservation Easement

Site Number(s)	Description
CA-SDI-189 (P-37-000189)	Habitation site – bedrock milling features, lithic materials, stone tools, pottery sherds, animal bones, shell fragments, and a white majolica shard; settled from prehistoric to historic period
CA-SDI-7447 (P-37-007447)	Temporary camp – bedrock milling features and archaeological materials
CA-SDI-7448 (P-37-007448)	Temporary camp – bedrock milling features and archaeological materials Historic structures – corral, watering trough, and a historic refuse scatter
CA-SDI-7449 (P-37-007449)	Temporary camp – bedrock milling features, lithic materials, and stone tools

Approximately 2,997 acres of HCWA has not been surveyed for cultural resources, including the majority of the Original Acquisition Area (Figure 4).

4. Results of Cultural Resources Investigations

Prehistoric Period Resources

Based on the aforementioned surveys, there are a total of 43 cultural resources recorded within HCWA that include a prehistoric component (Appendix A). Of these cultural resources, there are 37 sites and 6 isolated finds (Appendix A). The site types are 8 habitation sites, 7 temporary camps, 5 lithic scatters, and 17 bedrock milling sites. The six isolated finds consist of flakes, manos, ceramics, and projectile points.

In addition, there are seven prehistoric resources immediately adjacent to HCWA outside the wildlife area boundaries. They consist of one habitation site, four temporary camps, one lithic scatter, and one bedrock milling site.

Historic Period Resources

Based on the aforementioned surveys, there are nine cultural resources within HCWA that include a historic component (see Appendix A). They include historic foundations, a historic sign, historic trash scatters, historic structures, and two home sites. They are described as late 19th to early 20th century resources of early settlers. Information about the historic structures is summarized in Table 5.

Table 5
Historic Structures within the Hollenbeck Canyon Wildlife Area

Structure	Dimensions	Findings
Historic Foundation	unknown	Clusters of granite field stone, which were stacked on the bedrock
Historic Structures	unknown	Corral, watering trough, and historic trash scatter; no evidence of prior buildings
Historic Sign	3 m x 7 m	Gasoline Curve – painted advertisement on vertical rock face
Historic Foundation	20 m x 20 m	Subterranean excavation lined with poorly mortared field stone and bricks and another brick feature
Historic Home Site	unknown	Lone eucalyptus and historic trash; no evidence of prior buildings or structures
Rock Circle Homestead	unknown	Dirt floor (8 ft. x 15 ft.) held in place by a stone foundation, dirt road, and circular structure of stacked rock (perhaps a corral for goats or sheep)
Board-and-Batten House	unknown	House with corrugated iron roof, electric meter box, and plumbing; trash scatter around the building

Sacred Lands

A search of the Sacred Lands files held by the California Native American Heritage Commission identified sacred lands within HCWA. No details of the nature of the resource were provided. A contact was given who may provide information about the resource.

5. Cultural Resource Status Recommendations

All resources identified by Hector (2002) were assigned a Treatment Category (Table 6). Hector employed the use of Treatment Categories as an alternative to ranking cultural resources by relative importance, in an effort to remove the subjectivity from site management. Her Treatment Categories were as follows:

- **Category 1** treatments are for resources that meet the eligibility criteria for inclusion in the National Register of Historic Places, or have significance under the California Environmental Quality Act (CEQA). The resources have integrity and are at risk for vandalism and disturbance.

- **Category 2** treatments are for resources that may be significant as defined by CEQA but have reduced potential for damage due to topographic isolation, inaccessibility, or limited surface artifacts.

- **Category 3** treatments are for resources that most likely do not meet National Register eligibility criteria (although a historic building or site located at an interpretive center may be an exception) and may or may not be significant as defined by CEQA.

- **Category 4** treatments are for resources that do not require any additional consideration. The category includes isolated artifacts or objects and sites where a data recovery program has been completed.

Table 6
Treatment Category Determinations by Hector (2002) for Resources within the Hollenbeck Canyon Wildlife Area

	Prehistoric Resource	Historic Resource
Category 1	2	
Category 2	9	2
Category 3	17	2
Category 4	7	1

Seven prehistoric resources, three historic resources, and one multi-component resource were not identified by Hector in 2002.

Hector (2002) identified the top priority of cultural resource management within the wildlife area as the protection of CA-SDI-7441, -9273, -9689, -14,439, and -14,443. These sites should not be accessible nor should any plans be made to develop or improve access to these locations. Revegetation programs should be implemented to hide CA-SDI-16,270, -16,271, -16, 272, and -16,273. In addition, corrals and split-wood fences located on Jamul Creek should be protected and preserved since they provide context to the ranching that existed there for so many years.

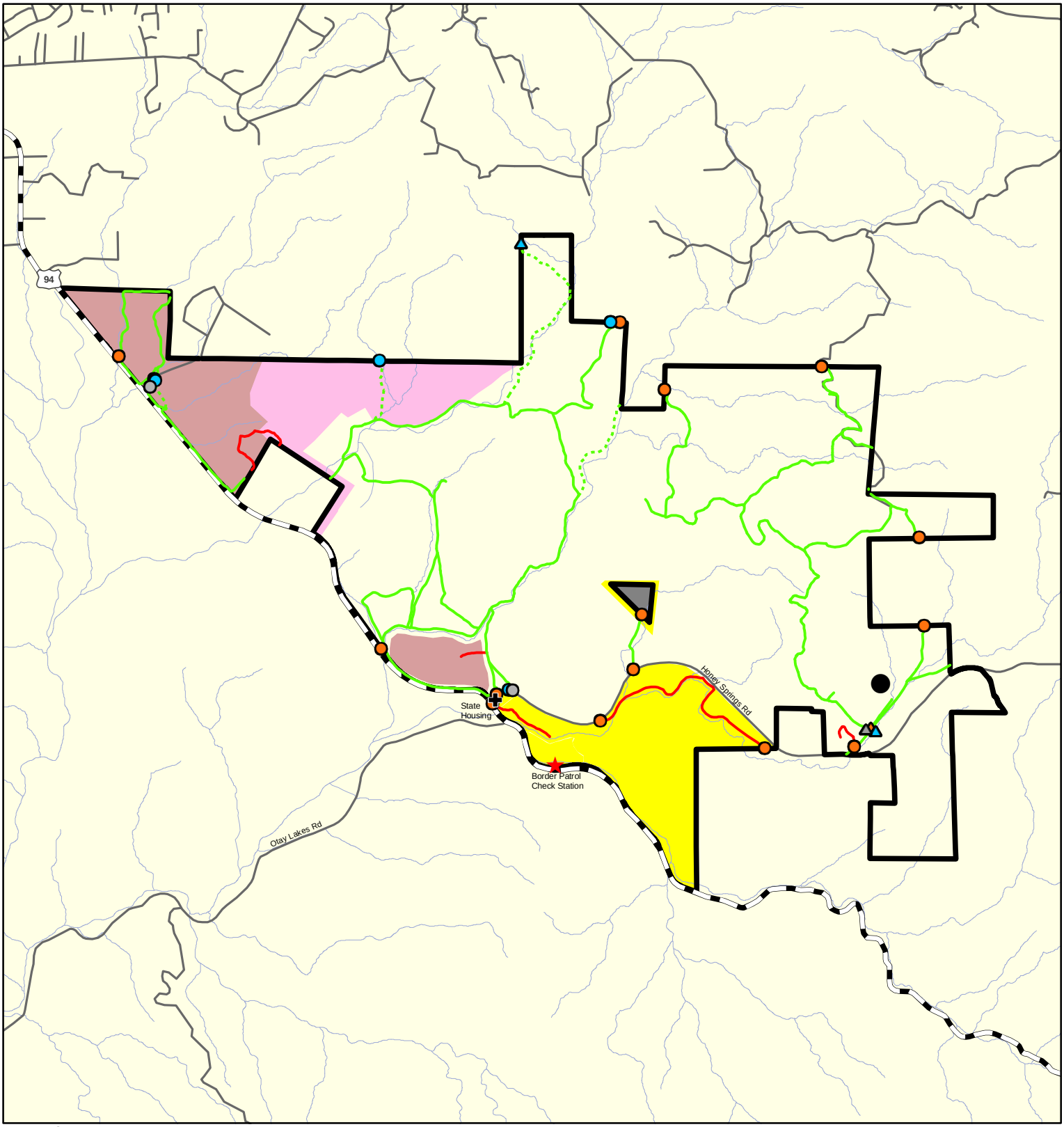
As previously noted, of the 5,189 acres set aside for HCWA, approximately 2,997 acres have not yet been surveyed for cultural resources. Additional surveys should be done as development and improvement planning continues. If additional public access points are added, additional surveys must be completed. Top priorities for additional surveys should be the Jamul Creek area and the fallow fields along SR 94 north of the Daley family complex. Before any ground disturbance can occur within an area that has not been surveyed, an archaeological survey and evaluation should be conducted.

F. EXISTING LAND USE

The Department manages lands under their jurisdiction that have been designated as wildlife areas for the purpose of protecting wildlife and habitat. The Department allows uses that are wildlife dependent and secondarily that are compatible with their mission (CDFG 2005a). Uses that are not wildlife dependent are prohibited. Public uses are designed to not harm sensitive species or habitat, nor violate any law. Public uses at HCWA include hunting; trail recreation, including equestrian use, mountain biking, and hiking; and hunting dog training (hereafter referred to as "dog training"). Select public use areas, closed areas, and many of the existing facilities are depicted in Figure 11.

1. Regulations and Allowable Public Use

The Department is managing the wildlife area with the overall goal of protecting and enhancing unique biological resources and providing the public with compatible wildlife-dependent educational and recreational opportunities. Compatibility of recreation with resource protection is a critical element of the planning effort. Lands that are designated as wildlife areas are listed in Title 14 of the CCR, Section 550. General regulations governing uses within all state wildlife areas are also listed in Section 550. Additional area-specific regulations are provided in Section 551 and reprinted by the Department in the pamphlet entitled *Hunting and Other Public Uses on State and Federal Lands* (CDFG 2002a). The Department publishes additional pamphlets detailing specific regulations associated with hunting of mammals and furbearers (CDFG 2002b), and resident and migratory upland game birds (CDFG 2002c). These regulations (general and specific) are summarized in Table 7.



Legend

- Closed Area
- Hunting Dog Training Area
- No Hunting Zone
- Border Patrol Check Station
- Proposed Hunting Dog Training Ponds/Fields
- State Housing

Parking

- Parking Area
- Proposed Parking Area

Gates

- Vehicle Gate
- Proposed Vehicle Gate
- Horse Gate
- Proposed Horse Gate

HCWA Trails/Roads

- Double-Track Trail
- Single-Track Trail
- Management Road

Basemap Legend

- HCWA Boundary
- State Highway
- Road
- Stream
- Not a Part (private in-holding)

N

Feet

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Public Use

Figure 11

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Date: Nov 29, 2006

Table 7
Title 14, Sections 550 and 551 of the California Fish and Game Code

Wildlife Areas - General Regulations	
Regional Manager's Authority	The regional manager shall have the authority to regulate public use of the state wildlife areas where such use is not provided for in CCR Title 14.
Entry Restrictions	The Department may limit the number of persons entering a state wildlife area during any period for safety reasons, to reduce crowding, or to provide for the limited take of a species. In addition, the Department may close portions of a state wildlife area or close the area entirely to public entry or to specific activities. Exclusive of closed areas, entry is allowed from 1 hour before sunrise to 1 hour after sunset. All entry restrictions must be obeyed.
Use Permits for Organized Events	Any person organizing an event or gathering to be conducted on a state wildlife area property shall obtain a use permit from the appropriate regional manager, and such events or gatherings shall be compatible with wildlife area objectives.
Motor Driven Vehicles	No person shall drive, operate, leave, place, or stop any motor driven vehicle or trailer anywhere in a state wildlife area except on public or established roads or on designated jeep trails and such other areas as designated by the Department. No person shall drive a vehicle carelessly in willful disregard of the rights or safety of others, or without due caution or at a speed or in a manner likely to endanger any person, property, or wildlife. In addition, all traffic signs and rules must be obeyed. No off-highway vehicles (OHVs) are allowed in a state wildlife area at any time.
Vandalism and Litter	No person shall tamper with, damage, or remove any property not his own when such property is located within a state wildlife area, and no person shall leave, deposit, drop, bury, or scatter bottles, broken glass, feathers, hides, wastepaper, cans, sewage, or other rubbish in a state wildlife area, except in designated receptacles. Where no receptacles are provided, all rubbish must be removed from the area and disposed of elsewhere. In addition, no person shall import and deposit any rubbish or toxic substance into a state wildlife area.
Trees and Minerals	No person shall dig up, cut, damage, or remove any trees, shrubs, vines, plants, or wood from a state wildlife area (vegetation may not be cut and used for the purpose of building blinds at HCWA). In addition, no person shall dig up or remove any humus, soil, sand, gravel, or rock from a state wildlife area.
Bottles and Artifact Collecting	No person shall collect or remove bottles or artifacts, or otherwise disturb the soil to locate or remove bottles or artifacts, from a state wildlife area.
Use of Dogs and Field Trials	The Department may prohibit or restrict the use of dogs on any state wildlife area. Dogs are allowed only for the use of hunting or training or when under immediate control. Dog training is allowed only in areas maintained by the Department. Special use permits are required for field trials.
Pesticide Use	No person, other than authorized government employees, shall apply any pesticide within a state wildlife area.
Livestock and Horses	No person shall permit any livestock to trespass on a state wildlife area, except under authorized grazing permits issued by the Department. Recreational use of horses is permitted only on roads open to vehicles and within 25 feet of the exterior boundary fences.
Fish and Frogs	Fish and frogs may not be taken for commercial purposes.
Hunting and Trapping	Hunting and trapping shall be allowed during the regular open seasons, and such other area use regulations as specified by the regional manager.
Possession and Use of Alcohol or Drugs	No person shall possess or use alcohol or other controlled substances while in the field or engaged in other ecreational activities.
Ejection	The Department may eject any person from a state wildlife area for violation of any area regulations, or for disorderly conduct, intoxication, or when a department employee determines that the general safety or welfare of the area or person thereon is in danger.

Special Regulations for Use at Hollenbeck Canyon Wildlife Area	
Method of Take	No rifles or pistols may be used or possessed. No shotgun with a live round in the chamber may be possessed outside of the designated hunting zone.
Hunt Days	Hunting is permitted daily from September 1 through January 31 in designated areas during open seasons for upland game birds, crow, coyote and resident small game.
Authorized Species	Upland game birds, crow, coyote and resident small game.
Camping and Trailers	Camping and overnight use is not allowed. Horse trailers are permitted within designated parking area, if space is available.
Fires	Not allowed year-round.
Hunting Dog Training	Allowed only in designated areas from September 1 through February. Only male ring-neck pheasants, male bobwhite quail, either sex feral pigeons, and male mallard ducks (with at least one wing clipped) may be used for hunting dog training purposes. Release or possession of any female bird species is prohibited. It is unlawful to release or possess a male mallard without at least one wing clipped.
Special Restrictions	Coyotes, Crows, Upland game and resident small game species may be taken only in designated areas. Horse and bicycle use is limited to designated trails and/or routes. Paint ball guns may not be used or possessed.

Source: California Code of Regulations, Title 14, Sections 550, 551 and 552 (as of 2008).

Title 14 of the CCR and other statutes regulate use within wildlife areas. Title 14 supersedes the authority of this LMP. If regulations pertaining to wildlife areas in Title 14 are changed in the future, those revised regulations would apply to HCWA, overriding this LMP. Proposed changes in uses identified in this LMP would need to be added to Title 14 during the next regulatory review cycle before those changes can become legal. Title 14 regulations are reviewed and changed, as needed, every three years. Area-specific LMPs are reviewed and updated, as needed, every five years. Therefore, every five years this LMP will be updated to reflect any future regulation changes that apply to wildlife areas in general or HCWA in particular.

In addition to the uses that are authorized through the Title 14 regulations, the Department's Regional Manager has the authority to issue permission to access Department lands for special uses, provided those uses do not violate any other laws. A special use permit may include habitat enhancement projects, public use projects, public events, volunteer events, specific research studies, educational field trips, or organized group activities. The Department has developed criteria to evaluate potential special uses to ensure that the proposed use does not violate any existing laws, e.g., CEQA, the federal Endangered Species Act (ESA), the California ESA, etc. The criteria for issuance of regional letters of permission for special use on Department lands include:

- The applicant will provide to DFG a description of the proposed activity that will have sufficient detail to evaluate the uses under CEQA, the federal ESA, and California ESA, including date, time, location, number of participants, activity planned, any vehicular

access needed, animals included in the activity (e.g., dogs, horses). The information has to be of sufficient detail for the Department to be able to conclude the following:

- The activity is safe for the participants;
- The activity does not significantly impact sensitive habitat;
- The activity does not significantly impact sensitive species;
- The activity does not significantly impact cultural resources;
- The activity does not conflict with approved public uses or affect other previously authorized special uses;
- The activity does not cause significant damage (i.e., anything requiring repairs) to the property;
- The activity results in a net benefit to species and/or habitats or achieves public use, monitoring/research or outreach objectives as outlined in the LMP for the property; and
- The activity does not result in the Department incurring any costs (staff time or other), or is offset by in-kind improvements to the property of equal or greater value.

- The proponents must provide proof of insurance for the activity (two million dollars with the Department named as additional insured) once the activity is conceptually approved under other existing laws.

- Following the special use, the applicant (or proponent) must provide a summary of the activity and provide participant numbers, project completion details, or study results to the Department.

2. Current Public Uses

Hunting

Hunting is permitted throughout the majority of HCWA with a valid license and the appropriate equipment and stamps. As described by the California Fish and Game Code, HCWA is a "Type C" wildlife area, which does not require an entry permit or pass for hunting during open seasons. A Type C area also depicts an unstaffed area that is not actively manipulated, but rather provides

a more natural setting. Hunting opportunities are provided such that sustainable yields of hunted populations are maintained.

Hunting within HCWA is focused on upland game species: mourning dove, California quail, and resident small game. Resident small game include pheasant, California or valley quail, jackrabbits, cottontail rabbits, dove, and wild turkeys. Presently, pheasant and turkeys do not occur on the property. The Department allows limited "put and take" pheasant hunts on the adjacent RJER; however, this type of hunting is not currently conducted on HCWA. Bird hunting at HCWA requires an upland game bird stamp. However, no permit or stamp is required for non-bird species such as rabbit. Non-game species will be considered for additions to the list of legal huntable wildlife at HCWA, including crows and non-game mammals, i.e., coyotes. Other species, e.g., deer, may also be added after further review of their populations within and surrounding the wildlife area. Hunting any of these species would not become legal until such species are formally added to the Title 14 regulations. The approximate seasons for the current legally huntable species are listed in Table 8.

Table 8
Upland Game and Resident Small Game Seasons Applicable to the Hollenbeck Canyon Wildlife Area

Species	Season*	Total Days*
Dove	Early September (early season) Late November – early December (late season)	15 45
Quail	Mid-October – late January Late August – mid-September (archery only)	105 (3.5 months) 20
Rabbits	Early July – late January	180 days (6 months)

*Dates and number of days vary annually.

Department management does not currently issue hunting access permits to HCWA; however, if overcrowded hunting conditions or habitat impacts become an issue, a program to designate the number of hunters for each hunting season may be implemented. Currently, the daily range of hunters is from 2 to 5 hunters on weekdays, 5 to 10 on non-opener weekend days, and 20 to 30 on opening days.

Some areas are closed to hunting, including areas adjacent to the private Daley Ranch compound in the western portion of HCWA and state housing areas south of Honey Springs Road (Figure 11). Hunting by shotgun or archery is allowed; no rifles or pistols are allowed due to the proximity of residential areas. Shotguns and archery may only be used for hunting; no target

practice is allowed. Hunting rabbits by box traps is allowed at any time during open season. Falconry is allowed but is not generally used due to the high number of raptors present that could attack hunting falcons.

Wildlife Viewing, Environmental Education, and Nature Study

HCWA provides a wide variety of terrain and habitats that support diverse plant and wildlife communities. The quality and diversity of habitat and wildlife species provide extensive opportunities for nature study and wildlife viewing. Although a lack of water features somewhat limits the number of bird species present, the area hosts several species of raptors: red-tail hawks, golden eagles, northern harriers, kestrels, and barn owls. Many other types of birds are also present, including the federally threatened California gnatcatcher.

There are also several species of small and large mammals to be seen by visitors to HCWA. These include mule deer, and predators such as bobcats, coyotes, and gray foxes. Mountain lions are rarely seen but do occur in the area. A range of reptiles and amphibians live in the area including rattlesnakes and the coast horned lizard, and federal and state listed species of special concern.

Formal education uses are currently few. Some school field trips and other groups are hosted at the adjacent RJER, which is intended to have a greater focus on educational programs; these groups may also visit HCWA.

Trail Use

Wildlife-dependent trail usage would presume that wildlife area visitors are interested in viewing wildlife in their native habitats. Modes of wildlife viewing at HCWA include hiking, walking, trail running, horseback riding, mountain biking, and hunter access. There are approximately 19 miles of double-track trails and an additional 2.4 miles of single-track trails open to public uses. Much of the terrain is hilly and rocky with steep drop-offs along trails in some places. From the parking area at Honey Springs Road at an elevation of about 750 feet, the trails climb into the hills, reaching elevations of about 1,800 feet near the northeastern portion of HCWA. Visitors are cautioned by signs at the entry to proceed at their own risk. In addition to recreational use, the trails are used for management, research, and Department activities, and by fire agencies and Border Patrol staff.

The trail segment that climbs through Hollenbeck Canyon itself is particularly attractive to visitors as it provides shade and scenery beneath large oak and sycamore trees, and scenic views once the trail user has climbed some distance up the canyon. Some trail segments within HCWA form loops, helping distribute impact, allowing visitors to cover trail segments without having to double-back and potentially providing more opportunities to view wildlife. Some wildlife may be flushed on a first pass and therefore on linear trails less wildlife may be present while walking back.

The San Diego County Community Trails Master Plan has been adopted by the County to establish a system of interconnected regional and community trails and pathways. These trails and pathways are intended to address an identified public need for recreation and transportation, and to provide health and quality of life benefits associated with hiking, biking, and horseback riding throughout the County's biologically diverse environments. Many of the existing HCWA and RJER trails connect with the existing and proposed County trail system. The Department may choose to accept some of the County's proposed trails within HCWA but is not obligated to accept all of them.

The California Hiking and Riding Trail connects to and overlays a portion of the trail system in HCWA. That segment of trail was formerly a part of the state-designated trail. The California Department of Parks and Recreation had an easement before the land was under Department jurisdiction. Equestrians and others may access HCWA from adjacent lands to the east on the California Hiking and Riding Trail, although the former trail easements were dissolved.

Current equestrian use of the trails is about 5 to 10 riders per day during the week and 10 to 20 on weekend days. Some of these riders are adjacent residents who can access the land on horseback (however there are no access points from private land). To protect the trails, equestrian use is allowed only on compacted, dry roads with a 3-day wait after a significant rain event. Organized group rides are required to get permits from the Department.

Hiking and other pedestrian use of the trails are somewhat greater than equestrian use, with about 10 to 20 hikers per day on weekdays and 20 to 40 per day on weekends. Mountain biking activity on the trails is similar in amount to equestrian use, with 5 to 10 riders on weekdays (generally in the morning and early evening) and 10 to 20 riders on weekend days. Several internet sites for mountain biking enthusiasts publicize the riding opportunities at HCWA. Hikers are allowed off-trail, while equestrians and bike riders are required to remain on designated routes. As noted for equestrian use, to protect the trails, mountain bike use is allowed only on dry trails with a 3-day closure after a significant rain event.

Dog Use and Hunting Dog Training

Visitors may bring dogs onto HCWA. Dogs must be under control at all times, either leashed, under voice control, or whistle, and/or hand signal. Only visitors training hunting dogs using live birds and shotguns must have a hunting license. Hunting dog training is only allowed in designated areas from September through February. Three areas have been designated for hunting dog training; the largest is a 500-acre area at the northwest corner of HCWA along SR 94, a 400 acre area located 4 miles up Honey Springs Road and an 80-acre area adjacent to the main parking area north of the junction of SR 94 and Honey Springs Road, near the main parking area. About 5 to 10 people per week use these areas for hunting dog training. Hunting dog trainers may release pigeons and male game birds for training purposes (see Title 14, Sections 550-551, Regulation Table 7 in this document for more detail). Dog field trials are not currently authorized on this wildlife area.

Research

Ongoing biological research of various plant and animal species supplies important information to guide future management and stewardship of resources. Mountain lion, deer, Quino checkerspot butterfly, and California gnatcatcher are among the species being studied. Quail and dove are also surveyed on a regular basis.

Unauthorized Activity

Unauthorized activities that do occur include motorized vehicle use and trail creation, either by off-road vehicles, mountain bike users, or equestrians. Hikers or hunters may also contribute to the problem to a lesser degree if repeatedly treading on off-trail areas. Some websites targeted at mountain bikers advertise the availability of single-track trails, which may increase the likelihood that these illegal trails will be used. Unauthorized use of HCWA by motorcyclists has been observed directly and is otherwise evident from ruts and other off-trail damage that exists on the site. A portion of this illegal access is known to occur from the northeastern corner of the property where off-site trails lead directly to HCWA. Additional unauthorized entry by motorcyclists occurs from off-site trails that lead into the eastern side of the wildlife area, north of Honey Springs Road. Citations are issued and fines can be levied by County court systems.

3. Existing Facilities

Roads and Trails

HCWA facilities that support public access include parking areas and trails. One parking area, located on Honey Springs Road near the intersection with SR 94, is gravel with a capacity for approximately 4 horse trailers (with enough turn-around area) and parking room for about 10 cars (Figure 11). If no horse trailers are present, the parking lot capacity is approximately 25 cars. There are no specifically demarcated spaces. The Department has posted regulatory signs at the trail head. The northernmost hunting dog training area in the wildlife area is accessed via Rancho Jamul Drive where roadside parking can accommodate approximately 20 cars. A second parking lot off of Rancho Jamul Drive, near SR 94, is available for special events. Both parking lots have gates that can be locked if the area needs to be secured; however, only the gate at the smaller lot off of Rancho Jamul Drive is typically closed. There are no other developed parking facilities within the wildlife area.

The majority of the existing trails at HCWA were formerly roads and are now classified as double-track trails, allowing for safe multiple uses (Figure 11). Four designated single-track trails occur within the wildlife area. A few old roads from past ranching and unauthorized vehicle use occur within the wildlife area, as well as other single-track trails that have been illegally created. Some of these features have been blocked to public access by boulders or other barriers, and others may eventually be closed and restored if determined necessary. Horses and mountain bikers are only allowed on double-track trails. Hunters use the trails to gain access to the interior of the area but hunt away from the trails. All trails near the perimeter of HCWA that neighbor private lands terminate approximately 100 feet from the property boundary; these trail ends are also posted (i.e., “Leaving State Wildlife Area”).

Five of the roads within HCWA are for management access only; all are blocked by gates and are posted to alert the public of the restricted access (Figure 11). In addition, all of the double-track trails are also used for official purposes, including Department management and law enforcement, research access, fire agencies, and Border Patrol access. Although most movement of unauthorized travelers across Department land takes place within the adjacent RJER, HCWA is within the jurisdiction of the U.S. Border Patrol; therefore, patrols, as needed, are conducted within HCWA. A Border Patrol checkpoint is located on the north side of SR 94 along the southern end of the property.

Existing roads within the wildlife area are maintained to provide passable access routes to various areas within the properties. Methods used to maintain the roads include mowing, scraping, and herbicide spraying to keep a smooth, level, and weed-free surface. This prevents excessive wear on equipment, helps prevent wildfires from hot vehicle parts coming in contact with dry vegetation, and allows access for work and for public recreational activities.

Other Facilities

Other facilities within HCWA include vehicle gates, horse gates, wells, fencing, signage, fire hydrants, and buildings. All gates are depicted in Figure 11 and the wells and fire hydrants are depicted in Figure 8. Fencing currently exists along all public roads that neighbor or traverse HCWA (e.g., Honey Springs Road, Rancho Jamul Drive, and SR 94) and along accessible portions of the perimeter of the property (i.e., where trails cross the perimeter from private lands). Signs are posted (3 per mile) around the perimeter of the property, and at major access points (e.g., gates and trail heads). The buildings include the two old houses that remain from the old Honey Springs Ranch in the southeast portion of the property (see Subsection E.2 of this section). In addition, one state-owned house is located east of SR 94, just south of Honey Springs Road. The state-owned house is routinely occupied by Department personnel.

4. Closed Area/Periods

The section of HCWA between (south of) Honey Springs Road and SR 94, an area of approximately 468 acres, is currently closed to the public (Figure 11). No entry is allowed to this area except to Department or other authorized personnel for authorized reasons. There is one unit of state housing in this area near Honey Springs Road and SR 94. A second, smaller area of approximately 35 acres, immediately north of Honey Springs Road, is also closed to public access (Figure 11). This closed area includes a private inholding and a surrounding area that is closed to minimize unauthorized entry to the private inholding. Closed zones buffer private property on the north and southeast, the Daley inholding and other private inholdings.

Staff and/or volunteers responsible for gate openings and closures may be instructed by the HCWA manager to keep gates closed and post temporary closure signs during high fire danger, severe weather, and for up to 3 days following heavy rain events.